

REMARKS

In the last Office Action, claim 34 was rejected under 35 U.S.C. §102(a) as being anticipated by European Patent Application No. 262,637 to Chida et al. ("Chida"), U.S. Patent No. 6,066,911 to Lindenmann et al. ("Lindenmann"), or U.S. Patent No. 4,965,482 to Ohnishi et al. ("Ohnishi"). Claims 39-44 and 47 were allowed by the Examiner.

Applicants and applicants' counsel note with appreciation the indication of allowable subject matter concerning claims 39-44 and 47. However, for the reasons noted below, applicants respectfully submit that the prior art of record also does not disclose or suggest the subject matter recited in amended independent claim 34.

In accordance with the present response, independent claim 34 has been amended to further patentably distinguish from the prior art of record. More specifically, with reference to Fig. 2 which has been reproduced as Exhibit A submitted herewith, amended independent claim 34 is directed to a piezoelectric actuator 2 and requires a plurality of piezoelectric elements 21a-21f, 22a-22l, 23a-23f and 24a-24l stacked in a first direction (e.g., in the left to right direction denoted by arrow H in Exhibit A) and in a second direction (e.g., top to bottom direction denoted by arrow V in Exhibit A) disposed generally perpendicular to the first direction for undergoing expansion/contraction movement to

vibrationally drive the piezoelectric actuator 2 in accordance with a driving signal applied to the piezoelectric elements. Amended independent claim 34 requires that the piezoelectric elements 21a-21f, 22a-22l, 23a-23f and 24a-24l are stacked in the second direction without any spaces therebetween. The length in the first direction H of at least one of the piezoelectric elements (e.g., the length of piezoelectric element 22a) is different from the length in the first direction H of at least one other of the piezoelectric elements (e.g., the length of piezoelectric element 21a). Electrodes 25a-25e are disposed between the piezoelectric elements stacked in the first direction H. By the foregoing construction, a piezoelectric actuator which is compact, which has a high energy converting efficiency, which can output a large vibration output and which is simple to manufacture is obtained.

Applicants respectfully submit that the prior art of record does not disclose or suggest the subject matter recited in amended independent claim 34.

Claim 34 was rejected under 35 U.S.C. §102(a) as being anticipated by Chida, Ohnishi or Lindemann. Applicants respectfully traverse this rejection and submit that amended claim 34 recites subject matter which is not identically disclosed or described in Chida, Ohnishi and Lindemann.

Amended independent claim 34 is directed to a piezoelectric actuator and requires a plurality of piezoelectric elements stacked in a first direction and in a second direction generally perpendicular to the first direction for undergoing expansion/contraction movement to vibrationally drive the piezoelectric elements in accordance with a driving signal applied thereto, the piezoelectric elements being stacked in the second direction without any spaces therebetween, and the length in the first direction of at least one of the piezoelectric elements being different from the length in the first direction of at least one other of the piezoelectric elements. Claim 34 further requires a plurality of electrodes disposed between the piezoelectric elements stacked in the first direction. No corresponding structural combination is disclosed or suggested by the prior art of record.

Lindemann discloses an ultrasonic driving element having a plurality of layers of piezoelectric material arranged one on top of another to form a stack of piezoelectric elements (Figs. 5, 6 and 10). However, Lindemann does not disclose or describe that the piezoelectric elements are stacked in a first direction and in a second direction generally perpendicular to the first direction, as required by independent claim 34. In this regard, the piezoelectric elements in Lindemann are stacked only in one

direction (i.e., in the vertical direction as viewed in Figs. 5, 6 and 10). Furthermore, Lindemann does not disclose or describe that the length in the first direction of at least one of the piezoelectric elements is different from the length in the first direction of at least one other of the piezoelectric elements, as required by independent claim 34. In the embodiments of Figs. 5, 6 and 10, the length of each of the piezoelectric elements in the direction in which they are stacked (i.e., the vertical direction) is the same.

Moreover, Lindemann does not disclose or describe that the piezoelectric elements are stacked in the second direction without any spaces therebetween, as required by amended independent claim 34. For example, in the embodiments shown in Figs. 5, 6 and 10, spaces (e.g., in the form of openings) are provided between the stacked piezoelectric elements.

Chida discloses a piezoelectric actuator having piezoelectric elements 2 and 6B stacked in first and second directions (Fig. 2). However, Chida does not disclose or describe that the length in the first direction of at least one of the piezoelectric elements is different from the length in the first direction of at least one other of the piezoelectric elements, as required by independent claim 34. In Chida, the length of all of the piezoelectric elements in any of the first and second directions is the same.

Ohnishi discloses an ultrasonic motor having a torsional vibration exciting piezoelectric element 101 and a longitudinal vibration exciting piezoelectric element 102 (Fig. 1). The piezoelectric elements 101, 102 are stacked in only one direction (i.e., in the vertical direction as viewed in Fig. 1). In contrast, independent claim 34 requires piezoelectric elements stacked in a first direction and in a second direction generally perpendicular to the first direction. Furthermore, Ohnishi does not disclose or describe that the piezoelectric elements are stacked in the second direction without any spaces therebetween, as required by amended independent claim 34. In Ohnishi, the piezoelectric element 102 is spaced from the piezoelectric element 101 by terminal plates 108, 109.

In the absence of the foregoing disclosure recited in independent claim 34, anticipation cannot be found. See, e.g., W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) ("Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration"); Continental Can Co. USA v. Monsanto Co., 20 USPQ2d 1746, 1748 (Fed. Cir. 1991) ("When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found."); Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ

481, 485 (Fed. Cir. 1984) (emphasis added) ("Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim").

Stated otherwise, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. This standard is clearly not satisfied by Lindemann, Chida and Ohnishi for the reasons stated above. Furthermore, Lindemann, Chida and Ohnishi do not suggest the claimed subject matter and, therefore, would not have motivated one skilled in the art to modify the ultrasonic driving element of Lindemann, the piezoelectric actuator of Chida, or the ultrasonic motor of Ohnishi to arrive at the claimed invention.

In view of the foregoing, applicants respectfully request that the rejection of claim 34 under 35 U.S.C. §102(a) as being anticipated by Lindemann, Chida or Ohnishi be withdrawn.

In view of the foregoing amendments and discussion, applicants respectfully submit that the application is now in condition for allowance. Accordingly, favorable

reconsideration and allowance of the claims are most respectfully requested.

Respectfully submitted,

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Date